

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20170130-E469960  
**Report Reference** E469960-20140923  
**Issue Date** 2017-JANUARY-30

**Issued to:** TIGO ENERGY, INC.  
420 BLOSSOM HILL RD 100  
LOS GATOS CA 95032-4511

**This is to certify that  
representative samples of**

COMPONENT - DISTRIBUTED GENERATION POWER  
SYSTEMS ACCESSORY EQUIPMENT;

COMPONENT - PHOTOVOLTAIC RAPID SHUTDOWN  
SYSTEM EQUIPMENT

See addendum page for models

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.


**Standard(s) for Safety:**

Standard for Inverters Converters and Controllers for Use in  
Independent Power Systems, UL 1741  
CAN/CSA C22.2 No. 107.1-1, "General Use Power Supplies."

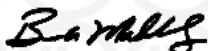
**Additional Information:**

See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's  
Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog  
number, model number or other product designation as specified under "Marking" for the particular  
Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products  
that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark:  
, may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is  
required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual  
recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance  
capabilities and are intended for use as components of complete equipment submitted for investigation rather  
than for direct separate installation in the field. The final acceptance of the component is dependent upon its  
installation and use in complete equipment submitted to UL LLC.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please  
contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20170130-E469960  
**Report Reference** E469960-20140923  
**Issue Date** 2017-JANUARY-30

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**Models:**

USR/CNR Component - Photovoltaic Junction Boxes: Photovoltaic Module Maximizer, Models MMJ-ES50: Smart Curve, TS4-O, TS4-L: Longer String, TS4-M and TS4-S.

USR/CNR – Photovoltaic Rapid Shutdown Equipment Components, Models TS4-O and TS4-L

Model numbers may be followed by alphanumeric suffixes representing non-safety critical features of the product



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



NOTICE OF COMPLETION  
AND  
AUTHORIZATION TO APPLY THE UL MARK



2019-07-11

MR. BIJAY SHRESTHA  
TIGO ENERGY, INC.  
420 BLOSSOM HILL RD # 100  
LOS GATOS, CA, 95032-4511

Our Reference:	File E469960, Vol 3	Order:	12786169
		Project:	4788939506
Your Reference:	Bijay Shrestha 3/22/2019		
Project Scope:	PVRSS system Phase 1 and 2 - Revisions to Delta's Inverter QIJS		

Dear Mr. Shrestha:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File , Vol 3.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document "Applicant responsibilities related to Early Authorizations" that can be found at the following web-site: <http://www.ul.com/EAResponsibilities>

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

Ian McDonald  
Senior Staff Engineer  
[Ian.McDonald@ul.com](mailto:Ian.McDonald@ul.com)

Reviewed by:

Bruce A. Mahrenholz  
CPO Director  
[Bruce.A.Mahrenholz@ul.com](mailto:Bruce.A.Mahrenholz@ul.com)

936e28b2-6963-42c9-8500-fedc74bb1f0c

## Reference Materials:

QIJS.E469960 Photovoltaic Rapid Shutdown Systems

**TIGO ENERGY, INC.**

June 12, 2019

E469960

420 BLOSSOM HILL RD # 100

LOS GATOS, CA 95032-4511 USA

System Cat. No.	Subassembly Equipment	System Ratings
<b>Photovoltaic rapid shutdown system</b>		
Tigo Rapid shutdown system, PVRSS: TS4 Optimizer (Report Date: 2017-02-24)	DC Attenuators: Models TS4-O, TS4-L (Report Date: 2014-09-23), TS4-R-O, TS4-R-O-DUO, TS4-A-O, TS4-A-O-DUO (Report Date: 2017-12-18) Wireless Controllers: Model 150-00000-50 (Report Date: 2017-01-06), 158-20000-00 (Report Date: 2018-03-21) Inverters: SMA SB6.0-1SP-US-40 Rated 600Vdc input, 10Adc input per string (3 inputs provided) SMA SB5.0-1SP-US-40 Rated 600Vdc input, 10Adc input per string (3 inputs provided) Huawei <u>Technologies Co., LTD.</u> SUN2000-30KTL-US Rated 1000Vdc input, 25A input per string (3 inputs provided) Evaluated with firmware SUN2000V200R002C20SPC104 SUN2000-40KTL-US, rated 1000 Vdc SUN2000-36KTL-US, rated 1000 Vdc SUN2000-33KTL-US, rated 1000 Vdc KACO blueplanet 3.0TL1 M2 WMODUS39 Rated 600Vdc input, 13.2A input per string (2 inputs provided) Power-One PVI-4.2-OUTD-S-US-A Rated 600Vdc input, 16Adc input per string (2 inputs provided) Fronius Galvo 2.5-1 208-240 Rated 550Vdc input, 16.1Adc input Primo 15.0-1 (15kW), rated 1000Vdc Primo 12.5-1 (12.5kW), rated 1000Vdc , Primo 11.4-1 (11.4kW), rated 1000Vdc , Primo 10.0-1 (10kW), rated 1000Vdc	Input: 8-90VDC, 15Amax per module, 15A max input short circuit current Output: 8-90VDC, 15A max cont. output current, 500W max per module (700W when used with -DUO optimizer), 1500VDC maximum system voltage, however limited by inverter DC system voltage.

	<p> <a href="#"><u>Primo 8.2-1, Rated 1000Vdc</u></a>  <a href="#"><u>Primo 7.6-1, Rated 1000Vdc</u></a>  <a href="#"><u>Primo 6.0-1, Rated 1000Vdc</u></a>  <a href="#"><u>Primo 5.0-1, Rated 1000Vdc</u></a>  <a href="#"><u>Primo 3.8-1, Rated 1000Vdc</u></a> </p> <p> Symo Advanced 24.0-3 (24kW), rated 1000Vdc ,  Symo Advanced 20.0-3 (20kW), rated 1000Vdc ,  Symo Advanced 15.0-3 (15kW), rated 1000Vdc ,  Symo Advanced 12.0-3 (12kW), rated 1000Vdc ,  Symo Advanced 10.0-3 (10kW), rated 1000Vdc </p> <p> Ingeteam  INGECON SUN 40TL U M480 Rated 1000Vdc input,  40Adc  Solectria Renewables PVI-23TL-480 Rated 1000Vdc  input, 27A input per string (2 inputs provided)  Solis Inverters Solis-5K-2G-US Rated 600Vdc input,  15Adc input per string (2 inputs provided)  Solectria Renewables PVI-5200TL Rated 600Vdc input,  15A input per string (2 inputs provided)  Sungrow SG60KU-M Rated 1000Vdc input, 112A input  SMA STP 12000TL-US-10 Rated 1000Vdc input, 14.5Adc  input per string  SMA STP 15000TL-US-10 Rated 1000Vdc input, 18.1Adc  input per string  SMA STP 20000TL-US-10 Rated 1000Vdc input, 24.1Adc  input per string  SMA STP 24000TL-US-10 Rated 1000Vdc input, 29.0Adc  input per string  SMA STP 30000TL-US-10 Rated 1000Vdc input, 36.1Adc  input per string  SMA STP 50-US-40 Rated 1000 Vdc input, 20.0Adc input  per string  SMA SB3.0-1SP-US-40 Rated 600Vdc input, 16Adc input  per string (3 inputs provided)  SMA SB3.8-1SP-US-40 Rated 600Vdc input, 16Adc input  per string (3 inputs provided)  SMA SB7.0-1SP-US-40 Rated 600Vdc input, 32Adc input  per string (3 inputs provided)  SMA SB7.7-1SP-US-40 Rated 600Vdc input, 32Adc input  per string (3 inputs provided) </p> <p> ABB  UNO-8.6-TL-OUTD-S-US Rated 600Vdc input, 24Adc  input per string (2 inputs provided)  ABB UNO-7.6-TL-OUTD-S-US Rated 600Vdc input, 24Adc  input per string (2 inputs provided) </p>	
--	---	--



	<p>ABB UNO-DM-6.0-TL-PLUS-US Rated 600Vdc input, 20Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-5.0-TL-PLUS-US Rated 600Vdc input, 19Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-4.6-TL-PLUS-US Rated 600Vdc input, 16Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-3.8-TL-PLUS-US Rated 600Vdc input, 10Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-3.3-TL-PLUS-US Rated 600Vdc input, 10Adc input per string (2 inputs provided)</p> <p><u>ABB Trio-TM-60.0-US-480, rated 1000Vdc</u> <u>ABB PVS-60-TL-CN, rated 1000Vdc</u></p> <p>Ginglong Solis, Solis-66K-US-F-SW(66kW), Rated 1000Vdc.</p> <p>Ginglong Solis, Solis-60K-US-F-SW(60kW), Rated 1000Vdc</p> <p>Ginglong Solis, Solis-50K-US-F-SW(50kW), Rated 1000Vdc.</p> <p>Ginglong Solis, Solis-50K-US-SW(50kW), Rated 1000Vdc.</p> <p>Ginglong Solis, Solis-40K-US-SW (40kW), Rated 1000Vdc.</p> <p>Ginglong Solis, Solis-40K-US-F-SW (40kW), Rated 1000Vdc.</p> <p>Canadian solar (CSI), CSI-66KTL-GS (66kW), Rated 1000Vdc</p> <p>Canadian solar (CSI), CSI-60KTL-GS (60kW), Rated 1000Vdc</p> <p>Canadian solar (CSI), CSI-50KTL-GS (50Kw), Rated 1000Vdc</p> <p>Canadian solar (CSI), CSI-50KTL-GS-FL (50Kw), Rated 1000Vdc</p> <p>Canadian solar (CSI), CSI-40KTL-GS (40Kw), Rated 1000Vdc</p> <p>Canadian solar (CSI), CSI-40KTL-GS-FL (40Kw), Rated 1000Vdc</p> <p>Delta(Residential), <u>M10-TL-US (10kW), Rated 600Vdc</u> M8-TL-US (8kW), Rated 600Vdc M6-TL-US (6kW), Rated 600Vdc M5-TL-US (5kW), Rated 600Vdc M4-TL-US (4kW), Rated 600Vdc</p> <p><u>E8-TL-US (8kW), Rated 600Vdc</u> <u>E6-TL-US (6kW), Rated 600Vdc</u></p>	
--	--	--

	<p>Chint, CPS SCA60KTL-DO/US-480, Rated 1000Vdc  Chint, CPS SCA50KTL-DO/US-480, Rated 1000Vdc  Chint, CPS SCA36KTL-DO/US-480, Rated 1000Vdc  Solectria, PVI 60TL (60kW), Rated 1000Vdc  Solectria, PVI 50TL (50kW), Rated 1000Vdc  Solectria, PVI 36TL (36kW), Rated 1000Vdc  Growatt New Energy Technology Co., Ltd.,  4000MTLP-US (4kW), Rated 600Vdc  6000MTLP-US (5kW), Rated 600Vdc  5000MTLP-US (6kW), Rated 600Vdc  7000MTLP-US (7kW), Rated 600Vdc  7600MTLP-US (7.6kW), Rated 600Vdc  9000MTLP-US (8kW), Rated 600Vdc  8000MTLP-US (9kW), Rated 600Vdc  10000MTLP-US (10kW), Rated 600Vdc  33000TL3-US (36kW), Rated 1000Vdc  36000TL3-US (33kW), Rated 1000Vdc  40000TL3-US (40kW), Rated 1000Vdc  SMA Solar Technology, STP62 US-41, Rated 1000Vdc  SMA Solar Technology, STP50 US-41, Rated 1000Vdc  SMA Solar Technology, STP33 US-41, Rated 1000Vdc  SMA, SB 7.7 SP-US-41, rated 600Vdc  SMA, SB 7.7 <b>TP</b>-US-41, rated 600Vdc  SMA, SB 7.0 SP-US-41, rated 600Vdc  SMA, SB 7.0 TP-US-41, rated 600Vdc  SMA, SB 6.0 SP-US-41, rated 600Vdc  SMA, SB 6.0 TP-US-41, rated 600Vdc  SMA, SB 5.0 SP-US-41, rated 600Vdc  SMA, SB 5.0 TP-US-41, rated 600Vdc  SMA, SB 3.8 SP-US-41, rated 600Vdc  SMA, SB 3.8 TP-US-41, rated 600Vdc  SMA, SB 3.0 SP-US-41, rated 600Vdc  SMA, SB 3.0 TP-US-41, rated 600Vdc  SolaX Power Co. Ltd., A1-Hybrid-8.6-US, 500Vdc  SolaX Power Co. Ltd., A1-Hybrid-7.6-US, 500Vdc  SolaX Power Co. Ltd., A1-Hybrid-7.0-US, 500Vdc  SolaX Power Co. Ltd., A1-Hybrid-6.0-US, 500Vdc  SolaX Power Co. Ltd., A1-Fit-8.6-US, 500Vdc  SolaX Power Co. Ltd., A1-Fit-7.6-US, 500Vdc  SolaX Power Co. Ltd., A1-Fit-7.0-US, 500Vdc  SolaX Power Co. Ltd., A1-Fit-6.0-US, 500Vdc  Pika Energy  X11400(11.4 kW) + PV-Link, rated 1000 Vdc  X7600(8 kW) + PV-Link, rated 1000 Vdc</p>	
Tigo Rapid Shutdown_TS4-	<p>DC Interrupters: Models TS4-S  <i>(Report Date: 2014-09-23)</i></p>	<p>Input: 8-90VDC, 15Amax  per module, 15A max</p>

<p>S (Report Date: 2017-05-20)</p>	<p>TS4-R-S, or TS4-R-S-DUO (Report Date: 2017-12-18) Wireless Controllers: Model 150-00000-50 (Report Date: 2017-01-06), 158-20000-00 (Report Date: 2018-03-21) Inverters: SMA SB6.0-1SP-US-40 Rated 600Vdc input, 10Adc input per string (3 inputs provided) SMA SB5.0-1SP-US-40 Rated 600Vdc input, 10Adc input per string (3 inputs provided)</p> <p>SMA, SB 7.7 SP-US-41, rated 600Vdc SMA, SB 7.7 TP-US-41, rated 600Vdc SMA, SB 7.0 SP-US-41, rated 600Vdc SMA, SB 7.0 TP-US-41, rated 600Vdc SMA, SB 6.0 SP-US-41, rated 600Vdc SMA, SB 6.0 TP-US-41, rated 600Vdc SMA, SB 5.0 SP-US-41, rated 600Vdc SMA, SB 5.0 TP-US-41, rated 600Vdc. SMA, SB 3.8 SP-US-41, rated 600Vdc SMA, SB 3.8 TP-US-41, rated 600Vdc SMA, SB 3.0 SP-US-41, rated 600Vdc SMA, SB 3.0 TP-US-41, rated 600Vdc.</p> <p>Fronius Fronius, Symo Advanced 24.0-3 (24kW), rated 1000Vdc , Fronius, Symo Advanced 20.0-3 (20kW), rated 1000Vdc , Fronius, Symo Advanced 15.0-3 (15kW), rated 1000Vdc , Fronius, Symo Advanced 12.0-3 (12kW), rated 1000Vdc , Fronius, Symo Advanced 10.0-3 (10kW), rated 1000Vdc Primo 8.2-1, Rated 1000Vdc Primo 7.6-1, Rated 1000Vdc Primo 6.0-1, Rated 1000Vdc Primo 5.0-1, Rated 1000Vdc Primo 3.8-1, Rated 1000Vdc</p> <p>Ingeteam Solis Inverters Solis-5K-2G-US Rated 600Vdc input, 15Adc input per string (2 inputs provided) SMA STP 12000TL-US-10 Rated 1000Vdc input, 14.5Adc input per string SMA STP 15000TL-US-10 Rated 1000Vdc input, 18.1Adc input per string</p>	<p>input short circuit current Output: 8-90VDC, 15A max cont. output current, 500W max per module (700W when used with -DUO optimizer), 1500VDC maximum system voltage, however limited by inverter DC system</p>
--	---	---



	<p>SMA STP 20000TL-US-10 Rated 1000Vdc input, 24.1Adc input per string</p> <p>SMA STP 24000TL-US-10 Rated 1000Vdc input, 29.0Adc input per string</p> <p>SMA STP 30000TL-US-10 Rated 1000Vdc input, 36.1Adc input per string</p> <p>SMA STP 50-US-40 Rated 1000 Vdc input, 20.0Adc input per string</p> <p>SMA SB3.0-1SP-US-40 Rated 600Vdc input, 16Adc input per string (3 inputs provided)</p> <p>SMA SB3.8-1SP-US-40 Rated 600Vdc input, 16Adc input per string (3 inputs provided)</p> <p>SMA SB7.0-1SP-US-40 Rated 600Vdc input, 32Adc input per string (3 inputs provided)</p> <p>SMA SB7.7-1SP-US-40 Rated 600Vdc input, 32Adc input per string (3 inputs provided)</p> <p>Pika Energy</p> <p>X11400(11.4 kW) + PV-Link, rated 1000 Vdc</p> <p>X7600(8 kW) + PV-Link, rated 1000 Vdc</p> <p>Huawei</p> <p>Evaluated with firmware</p> <p>SUN2000V200R002C20SPC104</p> <p>SUN2000-40KTL-US</p> <p>SUN2000-36KTL-US</p> <p>SUN2000-33KTL-US</p>	
<p>Tigo Rapid Shutdown_TS4-S-LV</p> <p>(Report Date: 2017-05-20)</p>	<p>DC Interrupters: Models TS4-S (Report Date: 2014-09-23)</p> <p>TS4-R-S, or TS4-R-S-DUO (Report Date: 2017-12-18)</p> <p>Wireless Controllers: Model 150-00000-50 (Report Date: 2017-01-06)</p> <p>158-20000-00 (Report Date: 2018-03-21)</p> <p>Inverters: ABB UNO-8.6-TL-OUTD-S-US Rated 600Vdc input, 24Adc input per string (2 inputs provided)</p> <p>ABB UNO-7.6-TL-OUTD-S-US Rated 600Vdc input, 24Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-6.0-TL-PLUS-US Rated 600Vdc input, 20Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-5.0-TL-PLUS-US Rated 600Vdc input, 19Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-4.6-TL-PLUS-US Rated 600Vdc input, 16Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-3.8-TL-PLUS-US Rated 600Vdc input, 10Adc input per string (2 inputs provided)</p> <p>ABB UNO-DM-3.3-TL-PLUS-US Rated 600Vdc input, 10Adc input per string (2 inputs provided)</p>	<p>Input: 8-90VDC, 15Amax per module, 15A max input short circuit current</p> <p>Output: 8-90VDC, 15A max cont. output current, 500W max per module (700W when used with -DUO optimizer), 364.6VDC maximum system voltage.</p>

<p>Tigo Rapid shutdown system, PVRSS: Tigo Rapid Shutdown TS4-F (Report Date: 2019-01-24)</p>	<p>DC Shutdown model (Tigo): TS4-F, TS4-R-F, TS4-R-F-DUO, TS4-A-F, TS4-A-F-DUO Tigo Transmitter (PLC) : 490-00100-10, (RSS Transmitter PCBA, Single RSS Core), 490-00100-20 (RSS Transmitter PCBA, Dual RSS Core), 490-00000-10 RSS (Transmitter Din Rail, Single RSS Core), 490-00000-20 (RSS Transmitter Din Rail, Dual RSS Core) 492-00000-10 RSS (Transmitter Din Rail, Single RSS Core, Outdoor), 492-00000-20 (RSS Transmitter Din Rail, Dual RSS Core, Outdoor) Inverter: Ginglong Solis, Solis-66K-US-F-SW(66kW), Rated 1000Vdc. Ginglong Solis, Solis-60K-US-F-SW(60kW), Rated 1000Vdc Ginglong Solis, Solis-50K-US-F-SW(50kW), Rated 1000Vdc. Ginglong Solis, Solis-50K-US-SW(50kW), Rated 1000Vdc. Ginglong Solis, Solis-40K-US-SW (40kW), Rated 1000Vdc. Ginglong Solis, Solis-40K-US-F-SW (40kW), Rated 1000Vdc. Canadian solar (CSI), CSI-66KTL-GS (66kW), Rated 1000Vdc Canadian solar (CSI), CSI-60KTL-GS (60kW), Rated 1000Vdc Canadian solar (CSI), CSI-50KTL-GS (50Kw), Rated 1000Vdc Canadian solar (CSI), CSI-50KTL-GS-FL (50Kw), Rated 1000Vdc Canadian solar (CSI), CSI-40KTL-GS (40Kw), Rated 1000Vdc Canadian solar (CSI), CSI-40KTL-GS-FL (40Kw), Rated 1000Vdc Delta -Commercial, M80U (80kW), Rated 1000Vdc Delta -Commercial, M60U (60kW), Rated 1000Vdc Delta -Commercial, M42U (42kW), Rated 1000Vdc Delta -Commercial, M36U (36kW), Rated 1000Vdc Note: Delta-Commercial inverters, with or without the use of the inverter internal 12Vdc power supply as a source for the Tigo Transmitter.  Delta (Residential), M10-TL-US (10kW), Rated 600Vdc M8-TL-US (8kW), Rated 600Vdc M6-TL-US (6kW), Rated 600Vdc</p>	<p>Input: 8-90VDC, 15Amax per module, 15A max input short circuit current Output: 8-90VDC, 15A max cont. output current, 500W max per module (700W when used with -DUO optimizer), 364.6VDC maximum system voltage.</p>
---	--	---

	<p>M5-TL-US (5kW), Rated 600Vdc M4-TL-US (4kW), Rated 600Vdc</p> <p>E8-TL-US (8kW), Rated 600Vdc E6-TL-US (6kW), Rated 600Vdc</p> <p>YASKAWA / SOLECTRIA XGI1000-60/60-UL 60KW, Rated 1000Vdc XGI1000-60/65-UL 60KW, Rated 1000Vdc</p> <p>Growatt New Energy Co., Ltd., 4000MTLP-US (4kW), Rated 600Vdc 6000MTLP-US (5kW), Rated 600Vdc 5000MTLP-US (6kW), Rated 600Vdc 7000MTLP-US (7kW), Rated 600Vdc 7600MTLP-US (7.6kW), Rated 600Vdc 9000MTLP-US (8kW), Rated 600Vdc 8000MTLP-US (9kW), Rated 600Vdc 10000MTLP-US (10kW), Rated 600Vdc 33000TL3-US (36kW), Rated 1000Vdc 36000TL3-US (33kW), Rated 1000Vdc 40000TL3-US (40kW), Rated 1000Vdc</p> <p>SMA Solar Technology, STP62 US-41, Rated 1000Vdc STP50 US-41, Rated 1000Vdc , STP33 US-41, Rated 1000Vdc</p> <p>Note: with or without Tigo Transmitter. The SMA inverter may be provided with an internal Sunspec transmitter evaluated with the Tigo device for compatibility.</p> <p>SolaX Power Co. Ltd., A1-Hybrid-8.6-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Hybrid-7.6-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Hybrid-7.0-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Hybrid-6.0-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Fit-8.6-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Fit-7.6-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Fit-7.0-US, Rated 500Vdc SolaX Power Co. Ltd., A1-Fit-6.0-US, Rated 500Vdc</p> <p>Fronius, Symo Advanced 24.0-3 (24kW), rated 1000Vdc ,#</p> <p>Fronius, Symo Advanced 20.0-3 (20kW), rated 1000Vdc ,#</p> <p>Fronius, Symo Advanced 15.0-3 (15kW), rated 1000Vdc ,#</p> <p>Fronius, Symo Advanced 12.0-3 (12kW), rated 1000Vdc ,#</p>	
--	---	--

	<p>Fronius, Symo Advanced 10.0-3 (10kW), rated 1000Vdc # # w/o Tigo RSS Transmitter, inverter may use internal inverter PLC transmitter. Huawei Evaluated with firmware SUN2000V200R002C20SPC104 SUN2000-40KTL-US, rated 1000 Vdc SUN2000-36KTL-US, rated 1000 Vdc SUN2000-33KTL-US, rated 1000 Vdc</p> <p>ABB UNO-DM-6.0-TL-PLUS-US, rated 600 Vdc Trio-TM-60.0-US-480, rated 1000Vdc PVS-60-TL-CN, rated 1000Vdc</p> <p>Chint Power Limited to firmware "version 9.0" final release "9.0". CPS SCA60KTL-DO/US-480 rated 1000 Vdc, # CPS SCA50KTL-DO/US-480 rated 1000 Vdc, # # w/o Tigo RSS Transmitter, inverter may use internal inverter PLC transmitter. Chint Power CPS SCA36KTL-DO/US-480, rated 1000 Vdc SOLECTRIA, Limited to firmware "version 9.0". PVI 60TL (60kW) rated 1000 Vdc, # PVI 50TL (50kW) rated 1000 Vdc, # # w/o Tigo RSS Transmitter, inverter may use internal inverter PLC transmitter. SOLECTRIA PVI 36TL (36kW) SMA SMA, SB 7.7 SP-US-41, rated 600Vdc #, SMA, SB 7.7 TP-US-41, rated 600Vdc #, SMA, SB 7.0 SP-US-41, rated 600Vdc #, SMA, SB 7.0 TP-US-41, rated 600Vdc #, SMA, SB 6.0 SP-US-41, rated 600Vdc #, SMA, SB 6.0 TP-US-41, rated 600Vdc #, SMA, SB 5.0 SP-US-41, rated 600Vdc #, SMA, SB 5.0 TP-US-41, rated 600Vdc #, SMA, SB 3.8 SP-US-41, rated 600Vdc #, SMA, SB 3.8 TP-US-41, rated 600Vdc #, SMA, SB 3.0 SP-US-41, rated 600Vdc #, SMA, SB 3.0 TP-US-41, rated 600Vdc #.</p>	
--	---	--

	# w/o Tigo RSS Transmitter, inverter may use internal inverter PLC transmitter.	
--	--	--

---



June 10, 2019

Mr. Bijay Shrestha  
Tigo Energy Inc.  
420 Blossom Hill Rd.  
Los Gatos, CA 95032-4511

Subject: Tigo PVRSS (PV Rapid Shutdown System) Listing.

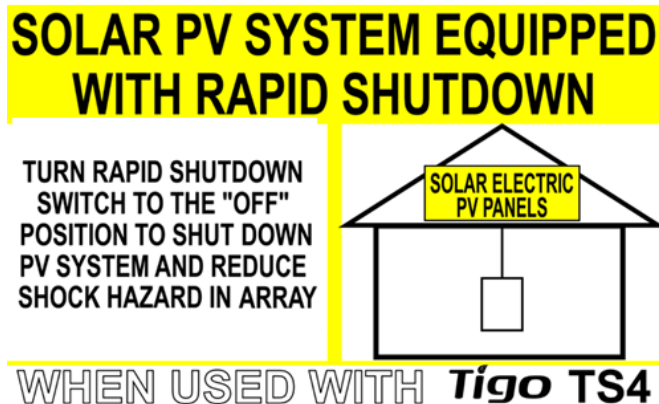
Mr. Shrestha,

Under PV Rapid Shutdown System certifications, UL evaluates specific PV rapid shutdown equipment to be used in combinations to create a Photovoltaic Rapid Shutdown System (PVRSS) under the UL categories (CCNs) QIJS and QIJS7. These systems are evaluated to UL 1741, ed 2, with a Revision date of 2018/02/15 to verify that the combination of equipment within the system configuration provides a rapid shutdown function compliant with the requirements of (NFPA 70) NEC section 690.12.

Systems are made up of many devices of PV rapid shutdown equipment, and UL evaluates these devices separately from the total system (examples given: inverters under UL CCNs (QIKH), (QHYZ) AC modules, (QIIO) DC controls, and other associated devices as PV RSE (PV Rapid Shutdown Equipment) under UL category QIJW). Devices evaluated as PV Rapid Shutdown Equipment are intended to become a part (subassembly equipment) of an overall PVRSS (System).

The evaluation of a device as QIJW equipment does not indicate it provides complete rapid shutdown functionality on its own. The energy created and stored in a total PV system must be verified for compliance for rapid shutdown with all the system's subassembly equipment connected under the PVRSS (System) QIJS Listing.

The device designated to initiate Rapid Shutdown for the above systems shall be provided with a permanent marking including the following wording:





Tigo systems certified under QIJS and QIJS7 shall be clearly marked with the above label, to meet the 2017 NEC 690.56 C(1) rapid shutdown marking requirement.

This label shall be located where visible, no more than 1m (3ft) from the service disconnecting means to which PV system are connected, per NEC 690.56.C (1)

The UL Listing under QIJS documents the subassembly equipment evaluated for use as part of a certified PV rapid shutdown system so that installers can source the correct equipment and Authorities Having Jurisdiction (AHJs) can inspect and verify the combinations. Under the Manufacturers Listing each PV Rapid shutdown system build option is given a unique identifier. Each system identifier then indicates the combination of subassembly equipment that can be used to make up that system as part of the UL certified PV Rapid Shutdown System.

Sincerely

Scott Picco  
Business Development Manager

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.